NHSN Device-Associated Module: CLABSI & CAUTI

Housekeeping

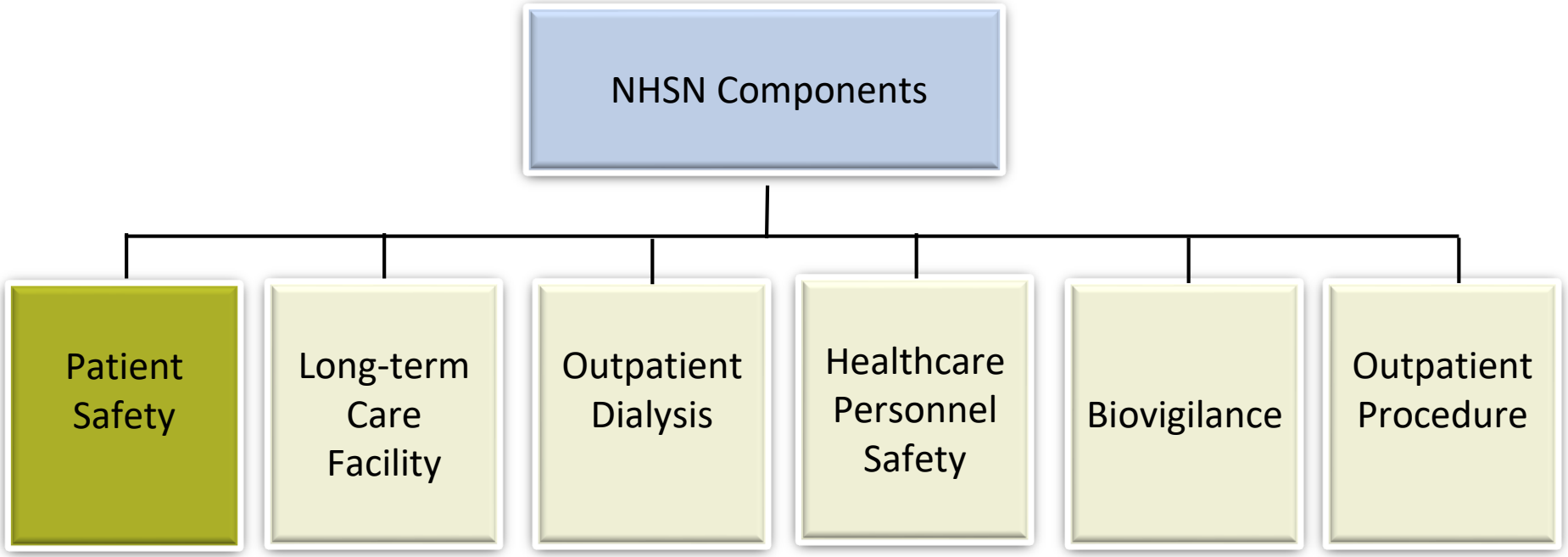
- **This call is being recorded.**
- **Press *6 to unmute your line to ask a question or use the chat box.**
- **All questions will be answered at the end.**

Outline

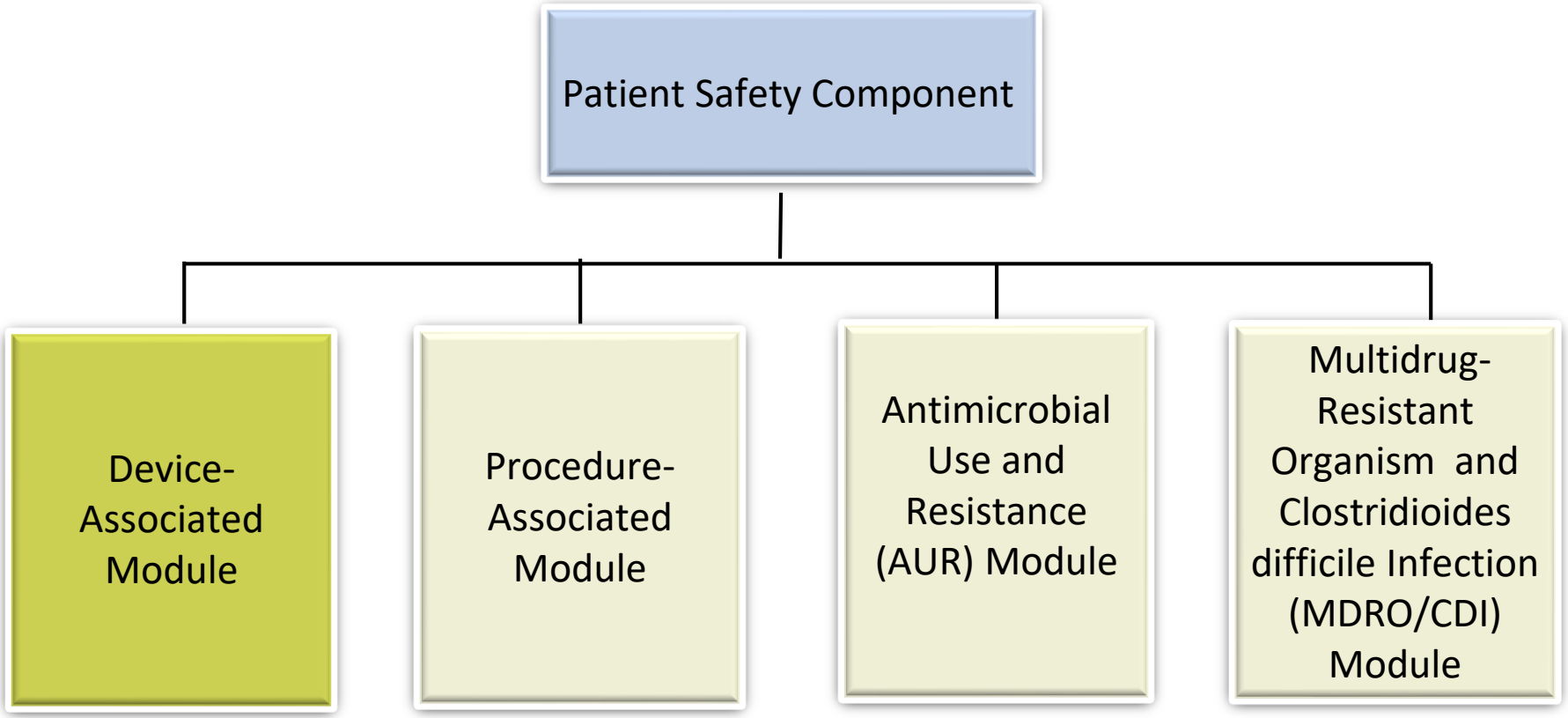
- NHSN background
- Reporting requirements
- Denominator data
  - Definitions, data entry
- Numerator (case) data
  - HAI Definitions
  - CLABSI Definitions
  - CAUTI Definitions
- Resources

NHSN Background

National Healthcare Safety Network (NHSN)



National Healthcare Safety Network (NHSN)



CLABSI and CAUTI Reporting Requirements

TDH/CMS CLABSI Reporting Requirements

Facility Type	Location(s)
Acute Care Hospitals	❑ Adult/Pediatric ICUs ❑ Neonatal ICUs ❑ Adult/Pediatric Medical, Surgical, and Medical/Surgical Wards
Long-term Acute Care (LTAC) Facilities	❑ Adult/Pediatric ICUs & Wards

TDH/CMS CAUTI Reporting Requirements

Facility Type	Location(s)
Acute Care Hospitals	❑ Adult/Pediatric ICUs ❑ Adult/Pediatric Medical, Surgical, and Medical/Surgical Wards
Long-term Acute Care (LTAC) Facilities	❑ Adult & Pediatric ICUs & Wards
Inpatient Rehabilitation Facilities (IRF)	❑ Adult & Pediatric Wards (freestanding IRFs or within acute care hospitals)

Device-Associated Denominator Data

Reporting Denominators

- **Options for collecting denominator data**
  - **Manual Collection Daily**
  - **Manual Collection *Weekly***
    - **Not available for specialty care areas/oncology or NICUs**
    - **Must have an average of at least 75 device days per month in the preceding 12 months to be eligible**

Daily Denominator Data Collection

NHSN National Healthcare Safety Network

Form Approved
OMB No. 0920-0666
Exp. Date: 11/30/2021
www.cdc.gov/nhsn

Denominators for Intensive Care Unit (ICU)/Other Locations (not NICU or SCA)

Page 1 of 1

*required for saving
Facility ID: *Location Code: *Month: *Year:

Date	*Number of Patients	**Number of patients with 1 or more **central lines**	**Number of patients with a **urinary catheter**	**Number of total patients on a **ventilator**	Number of patients **on APRV**	Number of **Episodes of Mechanical Ventilation**
1						
2						
3						
4						
5						
6						
7						
8						
9						

Record numbers each day, then enter monthly totals in NHSN.

Daily Denominator Data Collection

NHSN National Healthcare Safety Network

Form Approved
OMB No. 0920-0666
Exp. Date: 11/30/2019
www.cdc.gov/nhsn

Denominators for Specialty Care Area (SCA)/Oncology (ONC)

Page 1 of 1

*required for saving
Facility ID: *Location Code: *Month: *Year:

Date	*Number of Patients	**Number of patients with 1 or more central lines (if patient has both, count as Temporary)		**Number of patients with a urinary catheter	**Number of patients on a ventilator		Number of Episodes of Mechanical Ventilation
		Temporary	Permanent		Total Patients	Number on APRV	
1							
2							
3							
4							
5							
6							

Record numbers each day, then enter monthly totals in NHSN.

Daily Denominator Data Collection

Form Approved
OMB No. 0920-0666
Exp. Date: 11/30/2019
www.cdc.gov/nhsn

Denominators for Neonatal Intensive Care Unit (NICU)

Page 1 of 1
*required for saving

**conditionally required according to the events indicated in Plan

Facility ID:	*Location Code:	*Month:	*Year:

Date	Birth Weight Categories																			
	A = ≤750 g				B = 751-1000 g				C =1001-1500 g				D = 1501-2500 g				E= >2500 g			
	*Pt	**CL	VNT	UrC	*Pt	**CL	VNT	UrC	*Pt	**CL	VNT	UrC	*Pt	**CL	VNT	UrC	*Pt	**CL	VNT	UrC
1																				
2																				
3																				
4																				
5																				
6																				
7																				
8																				

Weekly Denominator Data Collection

- **Number of patients (patient days) and patients with devices in place (central lines/urinary catheters) are collected on a designated day each week, at the same time each day.**
- **Collect and enter in NHSN:**
  - **Monthly total for patient-days, based on daily collection**
  - **Patient days (based on weekly sample)**
  - **Central line days (based on weekly sample)**
  - **Urinary catheter days (based on weekly sample)**

Reporting Denominators

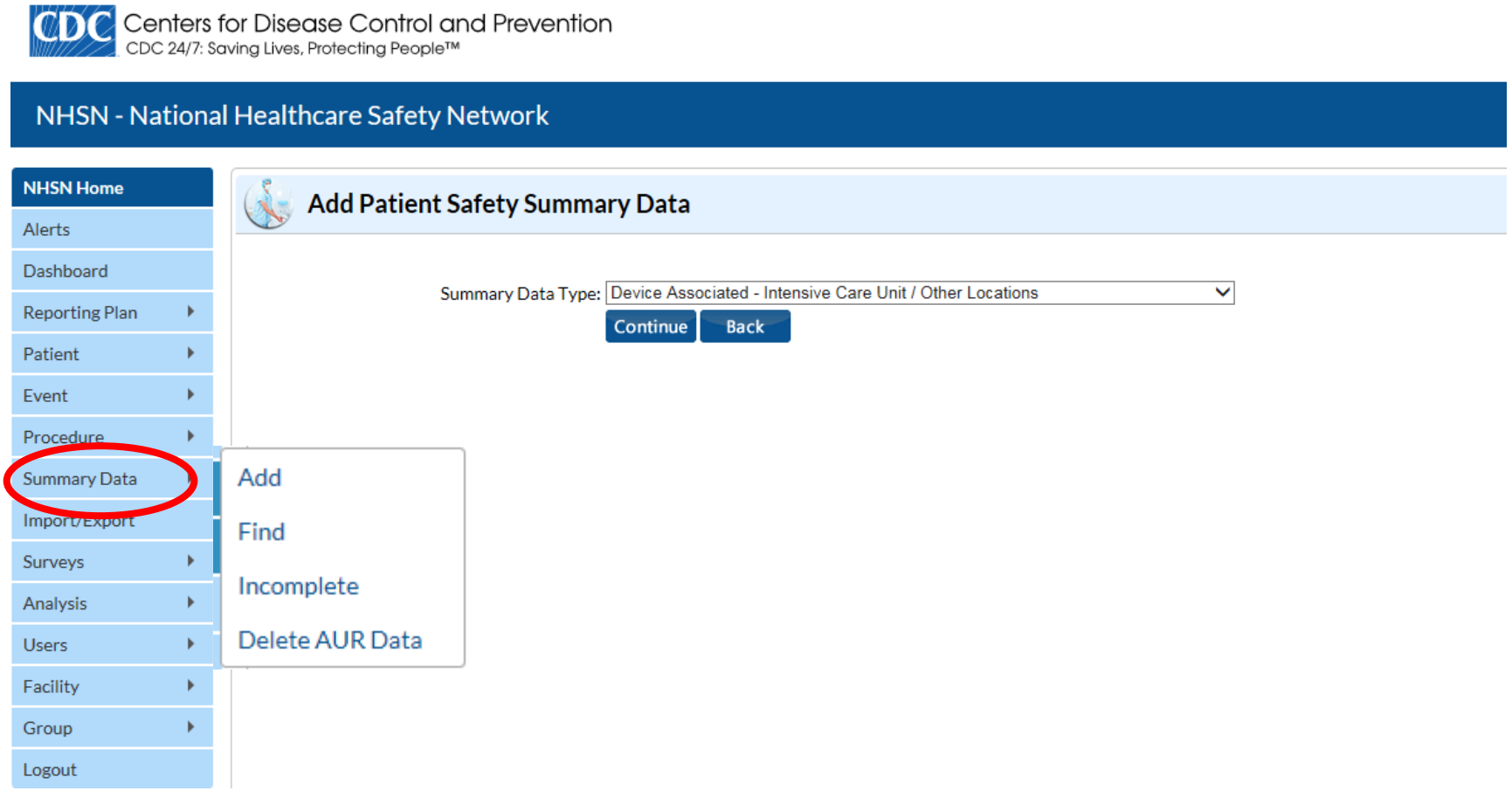
- **Electronic Collection**
  - **Must validate electronic data against manually collected data for 3 months and it must be within 5% (+/-) of the manually collected once a day counts.**
  - **Perform the validation of electronic counts separately for each location conducting CLABSI surveillance.**

Who Records the Denominators?

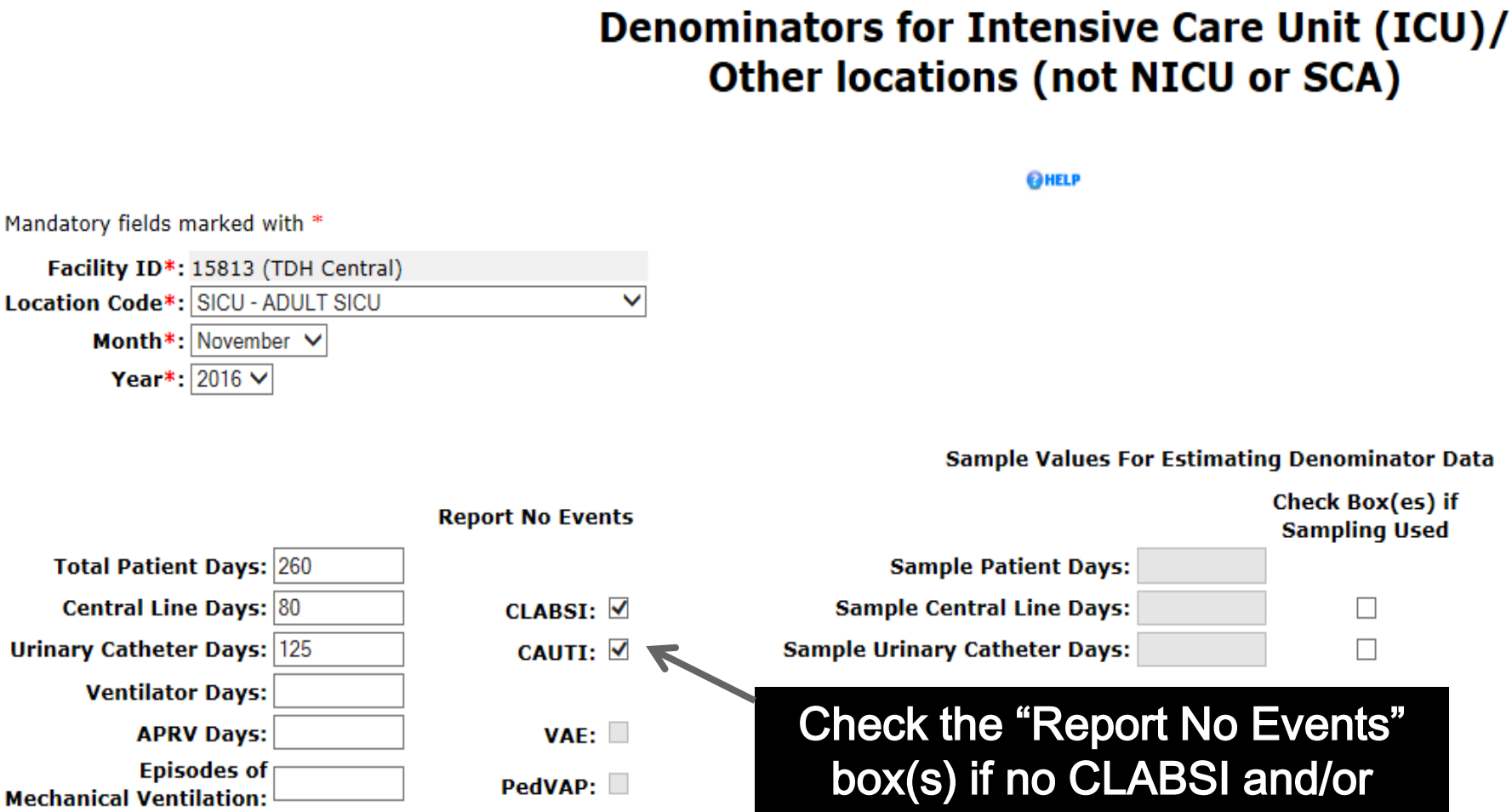
Note:
Whoever collects this information should receive training at regular intervals to ensure accuracy

- The IP can go to the unit and look at the patient or chart
  - What about weekends? Holidays?
- Use unit clerk to record at same time every day
- Charge nurse can record during end-of-shift report

Adding Summary Data



Adding Summary Data



Check the “Report No Events” box(s) if no CLABSI and/or CAUTI events occurred in that month and location, or CMS will not receive the data

Central Line Definition

Central Line

- **NHSN definition: An intravascular catheter that terminates at or close to the heart OR in one of the great vessels which is used for infusion, withdrawal of blood, or hemodynamic monitoring.**
- **Great vessels:**
  - **Aorta**
  - **Pulmonary artery**
  - **Superior vena cava**
  - **Inferior vena cava**
  - **Brachiocephalic veins**
  - **Internal jugular veins**
  - **Subclavian veins**
  - **External iliac veins**
  - **Common iliac veins**
  - **Femoral veins**
  - **Umbilical artery/vein (in neonates)**

Central Line (cont.)

- **Neither the type of device nor the insertion site are used to determine if a device is considered a CL for NHSN reporting purposes.**

- **At times an CL may migrate from its original central location after confirmation of placement. Once a line has been designated a CL, it continues to be a CL, regardless of migration, until removed from the body or patient discharge, whichever comes first.**

- **An introducer is an intravascular catheter, and depending on the location of its tip and use, may be a central line.**

Central Line (cont.)

- **A non-lumened intravascular catheter that terminates at or close to the heart or in a great vessel that is <u>not used</u> for infusion, withdrawal of blood or hemodynamic monitoring is not considered a CL for NHSN reporting purposes (for example non-lumened pacemaker wires.**

- **Please note: there are some pacemaker wires that <u>do</u> have lumens, which may be considered a central line.**

Central Line (cont.)

- **The following devices are not considered central lines:**
  - **Arterial catheters**
  - **Arteriovenous fistula**
  - **Arteriovenous graft**
  - **Atrial Catheters (transthoracic intra-cardiac catheters)**
  - **Extracorporeal membrane oxygenation (ECMO)**
  - **Hemodialysis reliable outflow (HERO) dialysis catheters**
  - **Intra-aortic balloon pump (IABP) devices**
  - **Peripheral IV or Midlines**
  - **Ventricular Assist Device (VAD)**

2021 CLABSI Updates

CLABSI Clarifications 2021

- ***For the purpose of meeting LCBI 1, NCT is defined as a methodology that identifies an organism directly from a blood specimen without inoculation of the blood specimen to any culture media. For instance, NCT does not include identification by PCR or an organism grown in a blood culture bottle or any other culture media.**

CLABSI Clarifications 2021

- **Table 2: Mucosal Barrier Injury Laboratory-Confirmed Bloodstream Infection (MBI-LCBI) testing guidance for LCBI-2 and LCBI-3.**
  - **Addition of "culture" to the Mucosal Barrier Injury Laboratory-Confirmed Bloodstream Infection (MCBI) table under MBI-LCBI 2 and MBI-LCBI 3 to reflect the testing methodology eligible for use to meet these criteria.**

MBI-LCBI 2	MBI-LCBI 3
Patient of **any age** fully meets LCBI 2 criterion	Patient ≤**1 year of age** fully meets LCBI 3 criterion
with at least **two matching** blood specimens	
with **ONLY Viridans Group *Streptococcus*** *and/*or ***Rothia spp.*** alone but no other organisms †	
identified by culture	

CLABSI Clarifications 2021

- **If during the current admission, there is documentation of a diagnosis of Epidermolysis bullosa (EB) report such an event, marking the EB Field as “Yes”.**

- **NOTE: The Epidermolysis bullosa (EB) CLABSI exclusion is limited to the genetic forms of EB in the pediatric population.**

CLABSI Definitions

BSI Definitions

- **Primary bloodstream infection (BSI)**
  - **Laboratory-confirmed bloodstream infection (LCBI) that is not secondary to an infection at another body site**
    - **LCBI 1, LCBI 2, LCBI 3**

- **Mucosal Barrier Injury Laboratory-Confirmed Bloodstream Infection (MBI-LCBI)**
    - **MBI-LCBI1, MBI-LCBI2, MBI-LCBI3**

Central Line-Associated BSI (CLABSI)

- **A laboratory confirmed bloodstream infection (LCBI)**
  - **LCBI where central line (CL) or umbilical catheter (UC) was in place for more than 2 days on the date of event, with day of device placement /access being Day 1.**

  AND

  - **A CL or UC was in place on the date of event or the day before**
  - **Date of event = date when the first element used to meet the LCBI criterion occurred**

LCBI 1

LCBI 1

If LCBI 1 criteria is met, consider MBI-LCBI 1

Patient of any age has a recognized bacterial or fungal pathogen, not included on the NHSN common commensal list:

1. Identified from one or more blood specimens obtained by a culture OR
2. Identified to the genus or species level by non-culture based microbiologic testing (NCT)* methods (for example, T2 Magnetic Resonance [T2MR] or Karius Test). **Note**: If blood is collected for culture within 2 days before, or 1 day after the NCT, disregard the result of the NCT and use only the result of the CULTURE to make an LCBI surveillance determination. If no blood is collected for culture within this time period, use the result of the NCT for LCBI surveillance determination.

AND

Organism(s) identified in blood is not related to an infection at another site
(See Appendix B: Secondary BSI Guide).

*For the purposes of meeting LCBI-1, NCT is defined as a methodology that identifies an organism directly from a blood specimen without inoculation of the blood specimen to any culture media. For instance, NCT does not include identification by PCR of an organism grown in a blood culture bottle or any other culture media.

Case Study 1

- **HD 8 Mrs. D, 50 y.o. has been in ICU for a week with a CL, that was placed on admission. She develops a fever. A non-culture blood test is done +Klebsiella Pneumoniae.**
- **HD 9 She becomes disoriented. Blood culture and urine cultures are collected. Blood culture is + for Klebsiella Pneumoniae and Urine culture is negative.**

Case Study 1

Hospital Day	First Diagnostic Test	IWP	Date of Event	RIT
7				
8	NCT	CL in use since admission. Fever. NCT + for Klebsiella Pneumoniae		
9	BC	BC + Klebsiella Pneumoniae, UC-neg		
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

Case Study 1

Hospital Day	First Diagnostic Test	IWP	Date of Event	RIT
7				
8		CL in use since admission. Fever. NCT + for Klebsiella Pneumoniae		
9	BC	BC + Klebsiella Pneumoniae, UC-neg	HAI	
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

LCBI 1 CLABSI HAI
DOE HD 9
RIT HD 9 thru day 22

LCBI 2 (all ages)

LCBI 2	
If LCBI 2 criteria is met, consider MBI-LCBI 2	Patient of any age has at least ***one*** of the following signs or symptoms: fever (>38.0°C), chills, or hypotension **AND** Organism(s) identified in blood is not related to an infection at another site (See Appendix B: Secondary BSI Guide). **AND** The same NHSN common commensal is identified by a culture from two or more blood specimens collected on separate occasions (see Blood Specimen Collection). Common Commensal organisms include, but are not limited to, diphtheroids (*Corynebacterium* spp. not *C. diphtheria*), *Bacillus* spp. (not *B. anthracis)*, *Propionibacterium* spp., coagulase-negative staphylococci (including *S. epidermidis)*, viridans group streptococci, *Aerococcus* spp. *Micrococcus* spp. and *Rhodococcus* spp. For a full list of common commensals, see the Common Commensal tab of the NHSN Organisms List.

Case Study 2

- HD 1 Jack is admitted to ICU. A central line was placed on admission.
- HD 3 Developed a fever of 39C.
- HD 4 Pt. confused, hypotensive, blood cultures drawn and grew CNS (common commensal)
- HD 5 BC repeated, grew S. epidermidis (common commensal)
- HD 8 Central line discontinued.

Case Study 2

Hospital day/date	First Diagnostic Test	IWP	Date of Event	RIT
1 Admit ICU		CL placed		
2				
3		Fever 39C.		
4	BC	Confused, hypotensive BC + CNS		
5	BC	BC+ S. Epi		
6				
7				
8		CL discontinued		
9				
10				
11				
12				
13				
14				
15				
16				

Case Study 2

Hospital day/date	First Diagnostic Test	IWP	Date of Event	RIT
1 Admit ICU		CL placed		
2				
3		Fever 39C.	HAI	14 days with DOE = day 1
4	BC	Confused, hypotensive BC + CNS		
5	BC	BC+ S. Epi		
6				
7				
8		CL discontinued		
9				
10				
11				
12				
13				
14				
15				
16				

HAI CLABSI
LCBI 2
Symptom. 2 common commensals
DOE HD 3
Pathogen -S. Epi

LCBI 3 (Patients ≤ 1 Year Old)

LCBI 3

If LCBI 3 criteria is met, consider MBI-LCBI 2

Patient ≤ 1 year of age has at least ***one*** of the following signs or symptoms: fever (>38.0°C), hypothermia (<36.0°C), apnea, or bradycardia

AND

Organism(s) identified in blood is not related to an infection at another site (See Appendix B: Secondary BSI Guide).

AND

The same NHSN common commensal is identified by a culture from two or more blood specimens collected on separate occasions (see Blood Specimen Collection).

Common Commensal organisms include, but are not limited to, diphtheroids (*Corynebacterium* spp. not *C. diphtheria*), *Bacillus* spp. (not *B. anthracis)*, *Propionibacterium* spp., coagulase-negative staphylococci (including *S. epidermidis)*, viridans group streptococci, *Aerococcus* spp. *Micrococcus* spp. and *Rhodococcus* spp. For a full list of common commensals, see the Common Commensal tab of the NHSN Organisms List.

Case Study 3

- **HD 1 Baby boy Sam was admitted to NICU after being born 1 month premature, CL placed**
- **HD 4 He had new onset of Bradycardia.**
- **HD 5 He developed a low grade fever of 100F and 2 blood specimens were drawn separately both growing S. Capitis.**

Case Study 3

Hospital day/date	First Diagnostic Test	IWP	Date of Event	RIT
1		Admit NICU, CL placed		
2				
3				
4		Bradycardia,		
5	Blood specimen	BS +S. capitis x2, Temp 100F		
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				

Case Study 3

Hospital day/date	First Diagnostic Test	IWP	Date of Event	RIT
1		Admit NICU, CL placed		
2				
3				
4		Bradycardia,		
5	Blood specimen	BS +S. capitis x2, Temp 100F		
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				

This is a HAI CLABSI, DOE HD 4, IWP HD 2-8. Symptom-Bradycardia, 2 matching common commensals.

Blood Specimen Collection Considerations

- **In LCBI 2 and 3, the phrase "two or more blood specimens drawn on separate occasions" means:**
  - **Blood from at least two separate blood draws was collected on the same or consecutive calendar days and**
  - **Two separate site preparations (decontamination steps) were performed during specimen collection.**

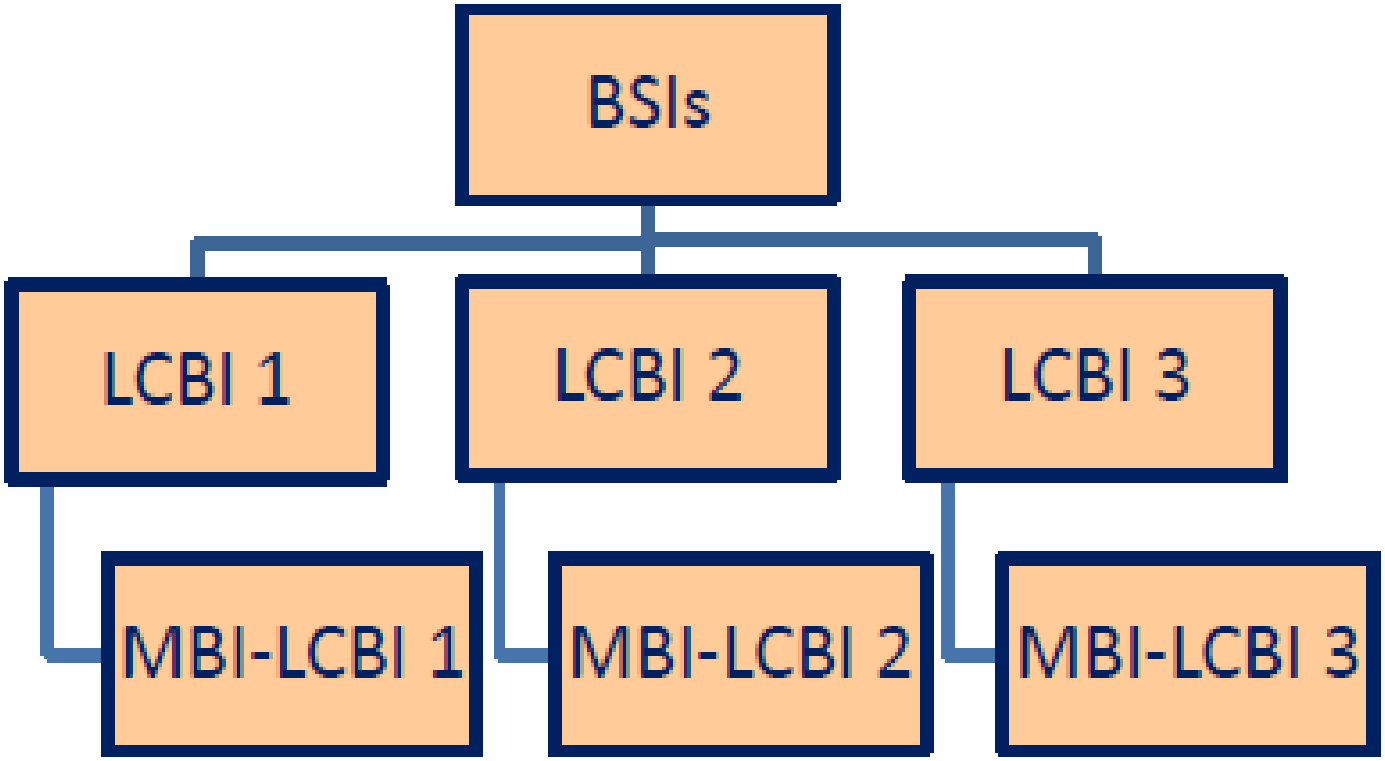
Sameness of Organisms

- **If the pathogen or common commensal is identified to the species level from 1 blood specimen, and a companion blood specimen is identified with only a descriptive name (e.g., to the genus level), then it is assumed that the organisms are the same.**
- **Only genus and species identification should be utilized to determine the sameness of an organism (i.e., matching organisms. No additional comparative methods should be used (e.g., Colony morphology, biotype or antibiograms).**
- **<u>Report the organism to the genus/species level only once</u>, and if antibiogram data are available, report the results from the most resistant panel.**

Blood Specimen Collection Considerations

- **Specimen Collection Considerations:**
  - **Blood specimens drawn through central lines can have a higher rate of contamination than blood specimens collected through peripheral venipuncture. However all positive blood specimens, regardless of the site from which they were drawn or the purpose for which they were collected, must be included when conducting in-plan CLABSI surveillance.**

MBI-LCBI



MBI-LCBI

Table 2: Mucosal Barrier Injury Laboratory-Confirmed Bloodstream Infection (MBI-LCBI)

Must meet **one** of the following MBI-LCBI criteria

An MBI-LCBI is a subset of the LCBI criteria; therefore, a BSI event must fully meet an LCBI criterion before evaluating for the corresponding MBI-LCBI criteria. **The MBI-LCBI DOE will always be the date the prerequisite LCBI criteria was met. Abnormal ANC and WBC values reflect risk factors for acquiring an MBI-LCBI, not symptoms of infection and therefore are not used in DOE determinations.**		
MBI-LCBI 1	**MBI-LCBI 2**	**MBI-LCBI 3**
Patient of **any age** fully meets LCBI 1 criterion	Patient of **any age** fully meets LCBI 2 criterion	Patient <u>≤</u>**1 year of age** fully meets LCBI 3 criterion
with at least **one** blood specimen	with at least **two matching** blood specimens	
with **ONLY intestinal organisms** from the NHSN MBI organism list*	with **ONLY Viridans Group *Streptococcus*** *and/*or ***Rothia spp.***alone but no other organisms †	
identified by culture or non-culture based microbiologic testing method	identified by culture	
<u>AND</u>		

MBI-LCBI

Patient meets at least *one* of the following:

1. Is an allogeneic hematopoietic stem cell transplant recipient within the past year with one of the following documented during same hospitalization as positive blood specimen:
   a. Grade III or IV gastrointestinal graft versus host disease [GI GVHD]
   b. ≥1-liter diarrhea in a 24-hour period (or ≥20 mL/kg in a 24-hour period for patients <18 years of age) with onset on or within the 7 calendar days before the date the positive blood specimen was collected.
2. Is neutropenic, defined as at least two separate days with ANC[+] and/or WBC values <500 cells/mm^3 collected within a 7-day time period which includes the collection date of the positive blood specimen, the 3 calendar days before and the 3 calendar days after (See Table 5).

Note:

1. If a patient meets both MBI-LCBI 1 and MBI-LCBI 2 criteria (specifically has Viridans Group *Streptococcus* or *Rothia* spp. plus only other MBI organisms in the blood specimen), report organisms as MBI-LCBI 1 with the recognized pathogen as pathogen #1 and the common commensal as pathogen #2.
2. Any combination of ANC and/or WBC values can be used to meet neutropenic criteria provided they are collected on separate days within the 7-day period that includes the date of the positive blood specimen, the 3 calendar days before and the 3 calendar days after.
3. When a blood specimen positive for an organism not included on the NHSN MBI organism list is collected during the BSI RIT of an MBI-LCBI, the initial MBI-LCBI event is edited to an LCBI and the identified non-MBI organism is added.

Examples of Neutropenia in MBI-LCBI Criteria

		Day -7	Day -6	Day -5	Day -4	Day -3	Day -2	Day -1	Day 1*	Day 2	Day 3	Day 4
Pt. A	WBC	100	800	400	300	ND	ND	320	400 + BC* x 1 *Candida* spp.	ND	550	600
Pt. B	ANC	ND	410	130	ND	ND	120	110	ND +BC* x 2 viridans strep plus fever >38°C	110	300	320
Pt. C	WBC	100	800	400	300	ND	ND	ND	600 + BC* x 1 *Candida* spp.	230	ND	400

*ND = not done; *Collection date of positive blood specimen; Highlight = ANC/WBC < 500 cells/mm^3; red font = ANC/WBC value used to meet neutropenic criteria*

Rationale for Table 5:

Patient A meets MBI-LCBI 1 criteria with neutropenia: Positive blood specimen with intestinal organism (*Candida* spp.) and neutropenia*. In this case, the WBC values on Day 1 = 400, and Day -1 = 320 are used.

Patient B meets MBI-LCBI 2 criteria with neutropenia: At least two positive blood specimens with *viridans group streptococci,* fever >38°C and neutropenia*. In this case, the ANC values on day -1 = 110 and Day -2 = 120 are used.

Case Study 4

- **HD 1 admit to oncology unit, port in place**
- **HD 3 accessed port**
- **HD 6 ANC level of 320cells/mm^3**
- **HD 7 two BC's drawn +*E. Coli***
- **HD 8 *WBC* level 410cells/mm^3**

Case Study 4

Admit date 9/1, oncology

Hospital Day	First Diagnostic Test	IWP	Date of Event	RIT	Secondary BSI Attribution Period
3		Port accessed			
4					
5					
6		ANC 320 cells/mm^3			
7	BC	BC x 2+ *E. Coli*			
8		WBC 410 cells/mm^3			
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Case Study 4

Admit date 9/1, oncology

Hospital Day	First Diagnostic Test	IWP	Date of Event	RIT	Secondary BSI Attribution Period
3		Port accessed			
4					
5					
6		ANC 320 cells/mm^3			
7	BC	BC x 2+ *E. Coli*	HAI		
8		WBC 410 cells/mm^3			
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

HAI CLABSI
MBI-LCBI Criterion 1:2 (neutropenia) with *E. Coli*
DOE HD 7
RIT HD 7-HD 10

Case Study 4a

- **HD 1 admit to oncology unit, port in place**
- **HD 3 accessed port**
- **HD 6 ANC level of 320cells/mm^3**
- **HD 7 two BC's drawn +*E. Coli***
- **HD 8 *WBC* level 410cells/mm^3**
- **HD 15 BC + S. aureus**

Case Study 4a

Admit date 9/1, oncology

Hospital Day	First Diagnostic Test	IWP	Date of Event	RIT	Secondary BSI Attribution Period
3		Port accessed			
4					
5					
6		ANC 320 cells/mm^3			
7	BC	BC x 2+ *E. Coli*	HAI		
8		WBC 410 cells/mm^3			
9					
10					
11					
12					
13					
14					
15		BC *+ S. aureus*			
16					
17					
18					
19					
20					

HAI CLABSI
MBI-LCBI Criterion 1:2 (neutropenia) with *E. coli* on DOE HD 7
RIT HD 7-HD 20
Must edit MBI-LCBI to LCBI 1 and add S. aureus

Case Study 4b

- **HD 1 admit to oncology unit, port in place**
- **HD 3 accessed port**
- **HD 6 ANC level of 320cells/mm^3**
- **HD 7 two BC's drawn +*E. Coli***
- **HD 8 *WBC* level 410cells/mm^3**
- **HD 15 BC + S. aureus (attributed to another site of infection)**

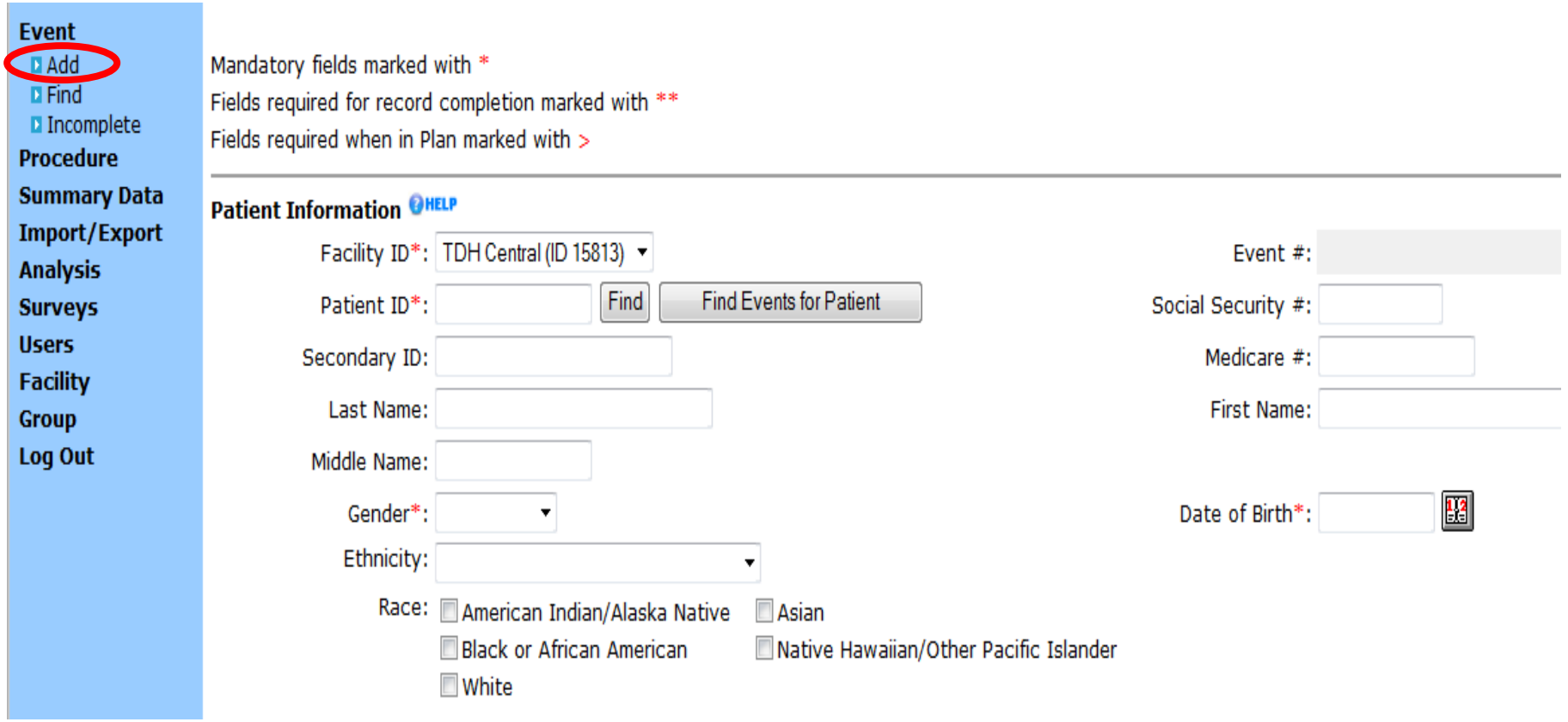
Case Study 4b

Hospital Day	RIT	IWP	IWP	RIT	Secondary BSI Attribution Period
3		Port accessed			
4					
5					
6		ANC 320 cells/mm^3			
7		BC x 2+ *E. Coli* *(HAI-DOE)*			
8		WBC 410 cells/mm^3			
9			Erythema, Pain		
10			Skin Culture- *+S. Aureus*		
11					
12					
13					
14					
15			BC+ *S. Aureus*		BC+ *S. Aureus*
16					
17					
18					
19					
20					
21					
22					

HAI CLABSI
MBI-LCBI Criterion 1:2 (neutropenia) with *E. coli* on DOE HD 7
RIT HD 7-HD 20

Skin 2a with secondary BSI-DOE HD 9 S. aureus

Report a CLABSI Event



Report a CLABSI Event

Patient Information

Facility ID *: TDH Central (ID 15813)

Patient ID *: 2020 Find Find Events for Patient

Secondary ID :

Last Name :

Middle Name :

Gender *: M - Male

Ethnicity :

Race:
- ☐ American Indian/Alaska Native
- ☐ Black or African American
- ☐ White
- ☐ Asian
- ☐ Native Hawaiian/Other Pacific Islander

Event Information

Event Type *: BSI - Bloodstream Infection

Post-procedure: N - No

MDRO Infection Surveillance *: No, this infection's pathogen/location are not in-plan for Infection Surveillance in the MDRO/CDI Module

Location *: 3NORTH - 3NORTH SURGWARD

Date Admitted to Facility >: 12/02/2019

Report a CLABSI Event

Risk Factors

Central line *: Y - Yes

Any hemodialysis catheter present *: Y - Yes

Location of Device Insertion: 5NO - SURGICAL WARD

Date of Device Insertion: 01/05/2021

Extracorporeal life support present (e.g. ECMO) *:

Ventricular assist device (VAD) present *:

Select all that apply: If any option(s) from below are selected 'Yes', then mark the "Central Line" risk factor field 'Yes' if an eligible central line was also in place.

Known or suspected Munchausen Syndrome by Proxy during current admission *: N - No

Observed or suspected patient injection into vascular line(s) within the BSI infection window period *: N - No

Epidermolysis bullosa during current admission *: N - No

Matching organism is identified in blood and from a site-specific specimen, both collected within the infection window period and pus is present at one of the following vascular sites from which the specimen was collected *: N - No

Report a CLABSI Event

Event Details

Specific Event >: LCBI - Laboratory confirmed bloodstream infection

Specify Criteria Used *

Signs & Symptoms (check all that apply)

Any patient
- ☐ Fever
- ☐ Chills
- ☐ Hypotension

<=1 year old
- ☐ Fever
- ☐ Hypothermia
- ☐ Apnea
- ☐ Bradycardia

Laboratory (check one)
- ☐ Recognized pathogen(s) from one or more blood specimens
- ☐ Common commensal from >= 2 blood specimens

Underlying Conditions for MBI-LCBI (check all that apply)
- ☐ Allo-SCT with Grade >= 3 GI GVHD
- ☐ Allo-SCT with diarrhea
- ☐ Neutropenia

Died **: N - No

Discharge Date: 01/02/2020

Pathogens Identified: Y - Yes If Yes, specify below ->

Pathogens

Pathogen 1: Escherichia coli - EC 21 drugs required

> AMK ○S ○R ○I ○N	> AMP ○S ○R ○I ○N	> CEFOX ○S ○R ○I ○N	CTET ○S ○R ○I ○N	> CIPRO ○S ○R ○I ○N	LEVO ○S ○R ○I ○N	MOXI ○S ○R ○I ○N
> COL ○S ○R ○N	PB ○S ○R ○N	> DORI ○S ○R ○I ○N	MERO ○S ○R ○I ○N	> DOXY ○S ○R ○I ○N	MINO ○S ○R ○I ○N	TETRA ○S ○R ○I ○N
> AMPSUL ○S ○R ○I ○N	AMXCLV ○S ○R ○I ○N	> CEFOT ○S ○R ○I ○N	CEFTRX ○S ○R ○I ○N	> AZT ○S ○R ○I ○N	> CEFAZ ○S ○R ○I ○N	> CEFEP ○S ○R ○I/S-DD ○N
> CEFTAZ ○S ○R ○I ○N	> CEFUR ○S ○R ○I ○N	> ERTA ○S ○R ○I ○N	> GENT ○S ○R ○I ○N	> IMI ○S ○R ○I ○N	> PIPTAZ ○S ○R ○I ○N	> TIG ○S ○R ○I ○N
> TMZ ○S ○R ○I ○N	> TOBRA ○S ○R ○I ○N					

Add Drug

2021 CAUTI

CAUTI 2021 Deletions

- **Removal of the age restriction for patients greater than 65 years of age without an indwelling urinary catheter.**
  - **Fever documented within the IWP is eligible for use to meet symptomatic urinary tract infection (SUTI) criteria for all patient ages, with or without an indwelling urinary catheter.**
  - **This includes SUTI 1a, SUTI 1b and SUTI 2 criteria.**
  - **As a result of this change in use of fever, a patient greater than 65 years of age with fever in the IWP and with or without a catheter in place for > 2 days on the date of event no longer meets asymptomatic bacteremic urinary tract infection**

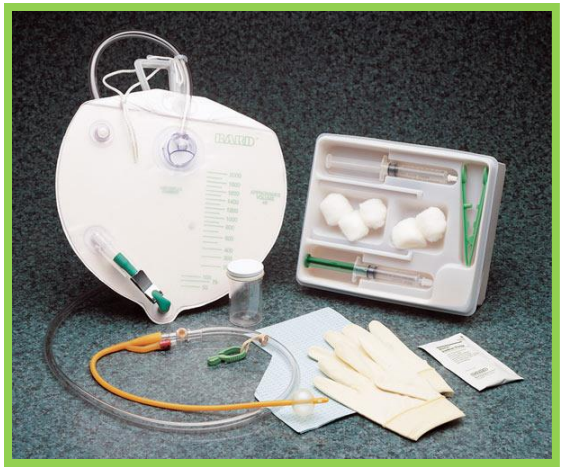
CAUTI 2021 Deletions

- **Removal of Urinary System Infection (USI) as a UTI specific type event**
  - **USI is no longer included as a specific type event within the major event UTI. Instead USI becomes its own major event type (See Chapter 17)**
  - **USI is available for secondary BSI assignment and as a specific SSI organ/space infection site.**
  - **UTI and USI can occur simultaneously, and each creates its own RIT and SBAP.**

CAUTI Definitions

Indwelling Urinary Catheter

- **<u>NHSN definition</u>: A drainage tube that is inserted into the urinary bladder through the urethra, is left in place, and is connected to a drainage bag (including leg bags) – also called a Foley catheter**
  - **Indwelling urethral catheters used for intermittent or continuous irrigation are included in CAUTI surveillance.**
  - **<u>Does not</u> include, condom, suprapubic, straight in-and-out catheters, ileoconduits or nephrostomy tubes.**



Symptomatic UTI (SUTI) – 1 a

SUTI 1a

Catheter-associated Urinary Tract Infection (CAUTI) in any age patient

Patient must meet 1, 2, and 3 below:

1. Patient had an indwelling urinary catheter that had been in place for more than 2 consecutive days in an inpatient location on the date of event AND was either:
   - Present for any portion of the calendar day on the date of event[†],
     OR
   - Removed the day before the date of event[‡]

2. Patient has at least ***one*** of the following signs or symptoms:
   - fever (>38.0°C
   - suprapubic tenderness*
   - costovertebral angle pain or tenderness*
   - urinary urgency ^
   - urinary frequency ^
   - dysuria ^

Symptomatic UTI (SUTI – 1 a)

- 3. Patient has a urine culture with no more than two species of organisms identified, at least one of which is a bacterium of ≥10^5 CFU/ml (See Comments). All elements of the SUTI criterion must occur during the IWP (See IWP Definition Chapter 2 Identifying HAIs in NHSN).

† When entering event into NHSN choose "INPLACE" for Risk Factor for IUC

‡ When entering event into NHSN choose "REMOVE" for Risk Factor for IUC

*With no other recognized cause (see Comments)

^ These symptoms cannot be used when catheter is in place. An IUC in place could cause patient complaints of "frequency" "urgency" or "dysuria".

Note:

- Fever is a non-specific symptom of infection and cannot be excluded from UTI determination because it is clinically deemed due to another recognized cause.

Case Study 1

- **HD 1: 66 y.o. to OR from ER for exploratory lap; Foley inserted in OR. Transferred to 5W surgical ward post-op.**
- **HD 2: Patient is stable. Foley in place.**
- **HD 4: Foley remains in place. Complaining of pain in right lower back. WBC increased to 19,000. He has cloudy, foul-smelling urine. Urine collected for culture positive for $>10^5$ CFU/ml *E.coli.***

Case Study 1

Hospital day/date	First Diagnostic Test	IWP	Date of Event	RIT	Secondary BSI Attribution Period
1 Admit , 5W		Foley inserted			
2					
3					
4	UC	c/o pain rt. lower back, WBC 19000, cloudy foul smelling urine UC +10^5 E. coli			
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					

Case Study 1

Hospital day/date	First Diagnostic Test	IWP	Date of Event	RIT	Secondary BSI Attribution Period
1 Admit , 5W		Foley inserted			
2					
3					
4	UC	c/o pain rt. lower back, WBC 19000, cloudy foul smelling urine UC +10^5 E. coli	HAI		
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					

HAI CAUTI
SUTI criterion 1-a
DOE HD 4
RIT HD 4-17
C/o pain Rt. Lower back /CVA

Symptomatic Non-Catheter associated UTI (SUTI – 1 b)

- **SUTI 1b**

  Non-Catheter-associated Urinary Tract Infection (Non-CAUTI) in any age patient

Patient must meet 1, 2, and 3 below:

1. One of the following is true:
   - Patient has/had an indwelling urinary catheter but it has/had not been in place for more than two consecutive days in an inpatient location on the date of event†

     OR
   - Patient did not have an indwelling urinary catheter in place on the date of event nor the day before the date of event †

2. Patient has at least ***one*** of the following signs or symptoms:
   - fever (>38°C)
   - suprapubic tenderness*
   - costovertebral angle pain or tenderness*
   - urinary frequency ^
   - urinary urgency ^
   - dysuria ^

Symptomatic Non-Catheter associated UTI (SUTI – 1 b)

- 3. Patient has a urine culture with no more than two species of organisms identified, at least one of which is a bacterium of $\geq 10^5$ CFU/ml. (See Comments) All elements of the SUTI criterion must occur during the IWP (See IWP Definition Chapter 2 Identifying HAIs in NHSN).

† When entering event into NHSN choose "NEITHER" for Risk Factor for IUC

*With no other recognized cause (see Comments)

^These symptoms cannot be used when IUC is in place. An IUC in place could cause patient complaints of "frequency" "urgency" or "dysuria".

Note:

- Fever is a non-specific symptom of infection and cannot be excluded from UTI determination because it is clinically deemed due to another recognized cause.

Case Study 2

- **HD 1: 55 y.o. male admitted to 3 east**
- **HD 4: c/o dysuria, UC +10^5 E.Coli**
- **HD 5: FC inserted**
- **HD 6: UC no growth**
- **HD 8: UC +10^5 S. Aureus, Temp. 39.0°C**
- **HD 10: BC + E. coli**

Case Study 2

Hospital day/date	First Diagnostic Test	IWP	Date of Event	RIT	Secondary BSI Attribution Period
1 Admit 3E		No foley catheter			
2		No foley catheter			
3		No foley catheter			
4	UC	UC 10^5 E. coli, dysuria	HAI		
5		Foley cath inserted			
6		Foley, UC, No growth			
7		Foley			
8				Foley cath, UC 10^5 S. aureus. Temp 39C	
9					
10					BC+E. Coli
11					
12					
13					
14					
15					
16					
17					

Case Study 2

Hospital day/date	First Diagnostic Test	IWP	Date of Event	RIT	Secondary BSI Attribution Period
1 Admit 3E		No foley catheter			
2		No foley catheter			
3		No foley catheter			
4	UC	UC 10^5 E. coli, dysuria	HAI		
5		Foley cath inserted			
6		Foley, UC, No growth			
7		Foley			
8				Foley cath, UC 10^5 S. aureus. Temp 39C	
9					
10					BC+E. Coli
11					
12					
13					
14					
15					
16					
17					

Non-catheter associated
SUTI 1b with 2nd BSI
DOE HD 4
UTI RIT HD 4-17
Pathogens: S. aureus, E.coli

SUTI -2 (≤1 year of age only)

- **SUTI 2**

  CAUTI or Non-CAUTI in patients 1 year of age or less

Patient must meet 1, 2, and 3 below:

1. Patient is ⩽1 year of age (with‡ or without an indwelling urinary catheter)

2. Patient has at least ***one*** of the following signs or symptoms:
   - fever (>38.0°C)
   - hypothermia (<36.0°C)
   - apnea*
   - bradycardia*
   - lethargy*
   - vomiting*
   - suprapubic tenderness*

3. Patient has a urine culture with no more than two species of organisms identified, at least one of which is a bacterium of ≥10^5 CFU/ml. (See Comments) All elements of the SUTI criterion must occur during the IWP (See IWP Definition Chapter 2 Identifying HAIs in NHSN).

SUTI -2 (≤1 year of age only)

- ‡ If patient had an IUC in place for more than two consecutive days in an inpatient location and the IUC was in place on the date of event or the previous day the CAUTI criterion is met. If no such IUC was in place, UTI (non-catheter associated) criterion is met.

  *With no other recognized cause (See Comments)

  Note: Fever and hypothermia are non-specific symptoms of infection and cannot be excluded from UTI determination because they are clinically deemed due to another recognized cause.

Case Study 3

- **HD 1 2 month old admitted NICU for diarrhea, foley catheter inserted**
- **HD 5 Temp 35.8**
- **HD 6 Urine culture is positive for E. coli ≥ 10^5**

Case Study 3

Hospital day/date	First Diagnostic Test	IWP	Date of Event	RIT	Secondary BSI Attribution Period
1 admit NICU		foley catheter inserted, diarrhea			
2					
3					
4					
5		Temp. 35.8			
6	UC	UC + ≥ 10^5 E. coli			
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					

Case Study 3

Hospital day/date	First Diagnostic Test	IWP	Date of Event	RIT	Secondary BSI Attribution Period
1 admit NICU		foley catheter inserted, diarrhea			
2					
3					
4					
5		Temp. 35.8	HAI		
6	UC	UC + ≥ 10^5 E. coli			
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					

SUTI 2, Catheter associated
IWP HD 3-HD 9,
DOE HD 5

ABUTI

Patient must meet 1, 2, and 3 below:

1. Patient with* or without an indwelling urinary catheter has no signs or symptoms of SUTI 1 or 2 according to age

2. Patient has a urine culture with no more than two species of organisms identified, at least one of which is a bacterium of ≥10^5 CFU/ml (see Comment section below)

3. Patient has organism identified** from blood specimen with at least ***one*** matching bacterium to the bacterium at ≥ 100,000 CFU/ml identified in the urine specimen, or is eligible LCBI criterion 2 (without fever) and matching common commensal(s) in the urine. All elements of the ABUTI criterion must occur during the Infection Window Period (See Definition Chapter 2 Identifying HAIs in NHSN).

*Patient had an IUC in place for more than two consecutive days in an inpatient location on the date of event, and IUC was in place on the date of event or the day before. *Catheter - associated ABUTI is reportable if CAUTI is in the facility's reporting plan for the location.*

** Organisms identified by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (e.g., not Active Surveillance Culture/Testing (ASC/AST).

Case Study 4

- **2/20 Mr. L admit CCU for MI, Foley inserted**
- **2/24 Elevated wbc's, No UTI s/s, +BC with *Staph aureus* and + UC with > 10^5 *Staph aureus***
- **2/28 Foley removed, discharged home**

Case Study 4

Hospital Day	First Diagnostic Test	IWP	Date of Event	RIT	Secondary BSI Attribution Period
1		Foley inserted			
2					
3					
4					
5	BC,UC	BC + *Staph aureus,* *UC* +10^5 *Staph aureus*			
6					
7					
8					
9		Foley removed, discharged home			
10					
11					
12					
13					
14					
15					
16					
17					
18					

Case Study 4

Hospital Day	First Diagnostic Test	IWP	Date of Event	RIT	Secondary BSI Attribution Period
1		Foley inserted			
2					
3					
4					
5	BC,UC	BC + *Staph aureus,* *UC* +10^5 *Staph aureus*	HAI		
6					
7					
8					
9		Foley removed, discharged home			
10					
11					
12					
13					
14					
15					
16					
17					
18					

HAI-ABUTI Catheter Associated
IWP-HD 2-HD 8
RIT- HD 5-HD18
SBAP HD 2-HD 18

Notes on the Definitions

- "Mixed flora" is not available in the pathogen list within NSHN. Therefore, it cannot be reported as a pathogen to meet the NHSN UTI criteria. Additionally, "mixed flora" represent at least two species of organisms. Therefore, an additional organism recovered from the same culture would represent more than two species of microorganisms. Such a specimen also cannot be used to meet the UTI criteria.

  The following excluded organisms cannot be used to meet the UTI definition:

  - Any *Candida* species as well as a report of "yeast" that is not otherwise specified
  - mold
  - dimorphic fungi or
  - parasites

  An acceptable urine specimen may include these organisms as long as one bacterium of $\geq$ 100,000 CFU/ml is also present. Additionally, these non-bacterial organisms identified from blood cannot be deemed secondary to a UTI since they are excluded as organisms in the UTI definition.

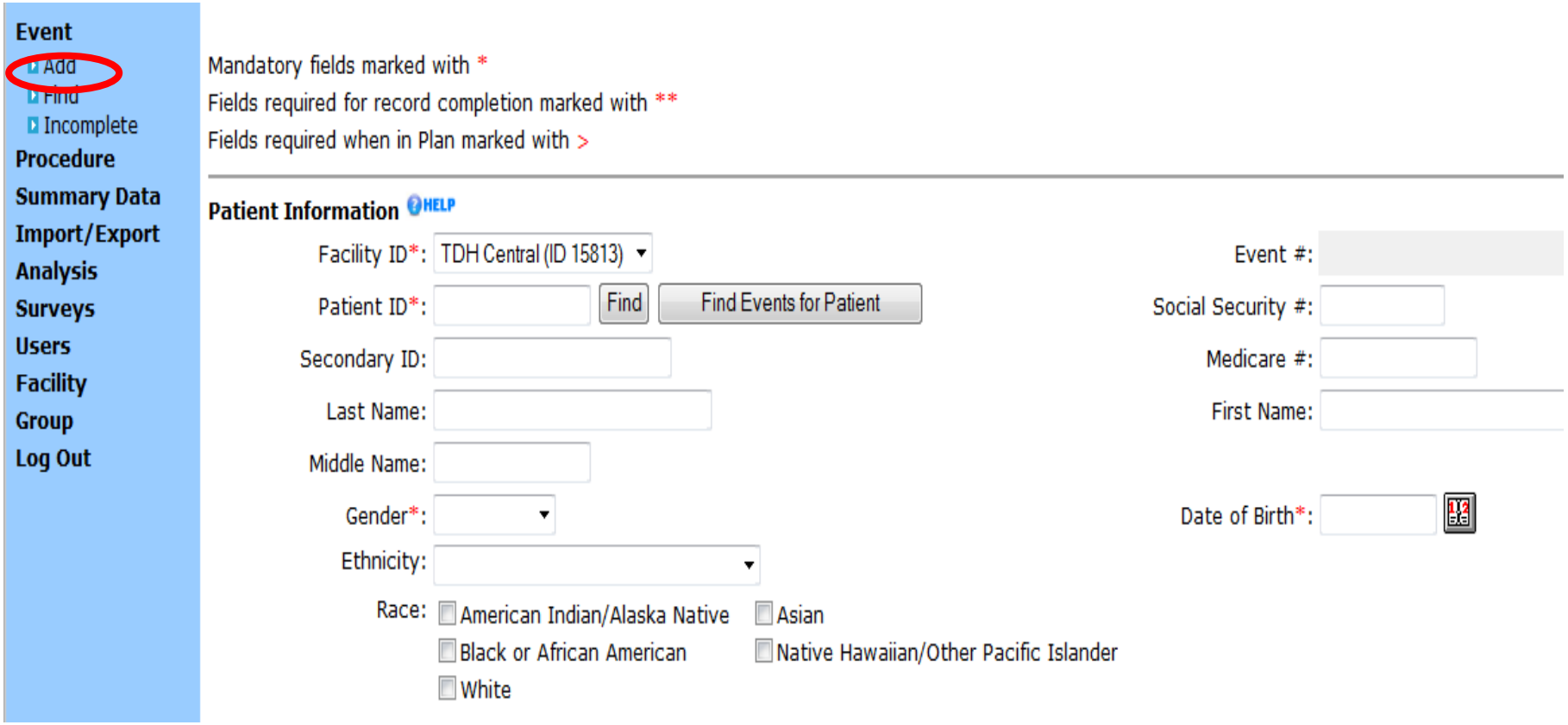
Notes on the Definitions

- Suprapubic tenderness whether elicited by palpation (tenderness-sign) or provided as a subjective complaint of suprapubic pain (pain-symptom), documentation of either found in the medical record is acceptable as a part of SUTI criterion if documented in the medical record during the Infection Window Period.

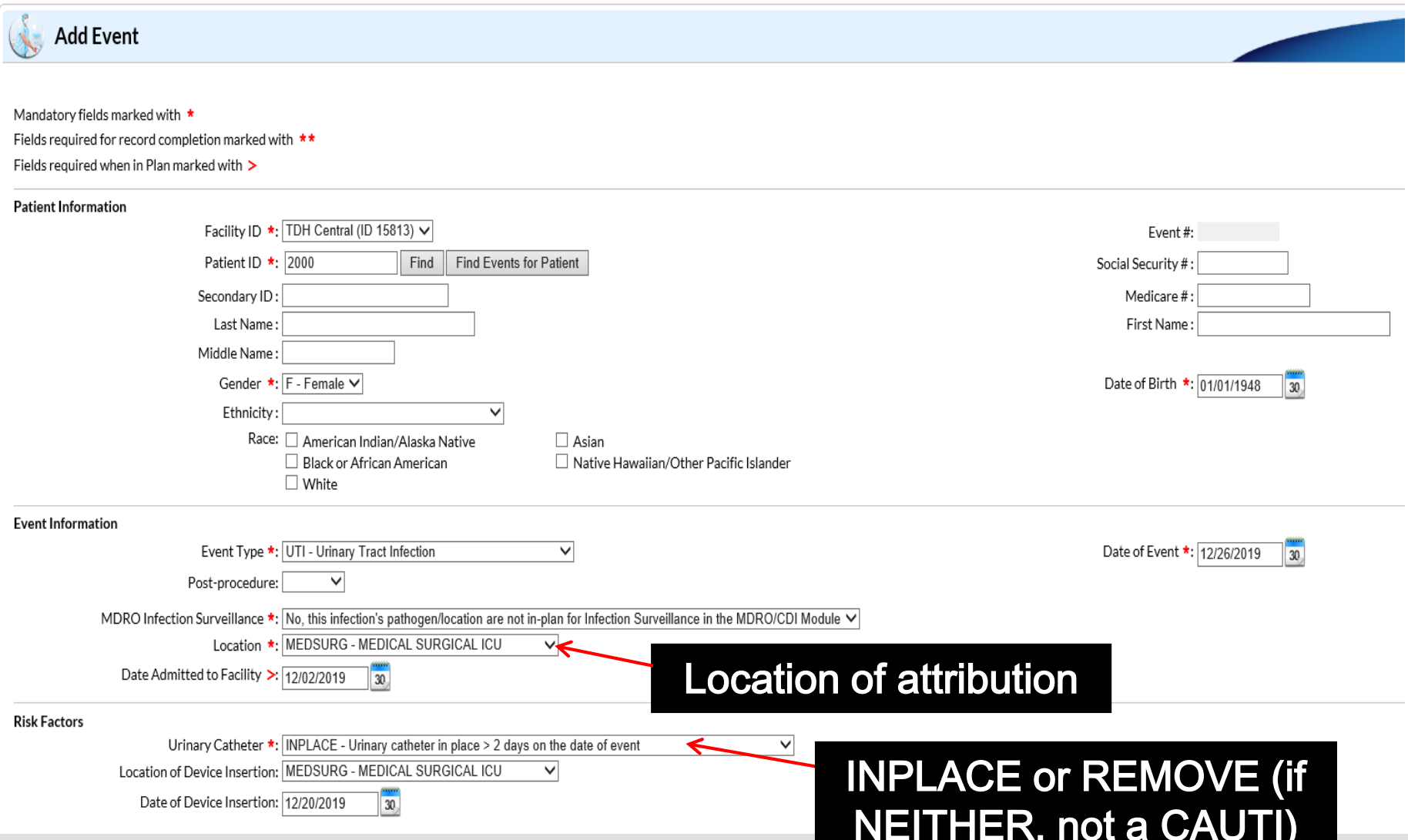
- Lower abdominal pain or bladder or pelvic discomfort are examples of symptoms that can be used as suprapubic tenderness. Generalized “abdominal pain” in the medical record is not to be interpreted as suprapubic tenderness as there are many causes of abdominal pain and this symptom is too general.

- Left or right lower back or flank pain are examples of symptoms that can be used as costovertebral angle pain or tenderness. Generalized "low back pain" is not to be interpreted as costovertebral angle pain or tenderness.

Report a CAUTI Event



Report a CAUTI Event



Report a CAUTI Event

SUTI or ABUTI, with relevant criteria

Event Details

Specific Event >: SUTI - Symptomatic UTI

Specify Criteria Used *

Signs & Symptoms

Any patient

- [x] Fever
- [ ] Urgency
- [ ] Frequency
- [ ] Dysuria
- [x] Suprapubic tenderness
- [ ] Costovertebral angle pain or tenderness
- [ ] Abscess
- [ ] Pain or tenderness
- [ ] Purulent drainage from affected area
- [ ] Other evidence of infection found on invasive procedure, gross anatomic exam, or histopathologic exam

<=1 year old

- [ ] Fever
- [ ] Hypothermia
- [ ] Apnea
- [ ] Bradycardia
- [ ] Lethargy
- [ ] Vomiting
- [ ] Suprapubic tenderness

Laboratory & Diagnostic Testing

- [x] Positive culture with no more than 2 species of organisms, at least one of which is a bacterium of >=10^5 CFU/ml
- [ ] Organism(s) identified
- [ ] Organism(s) identified from blood specimen
- [ ] Imaging test evidence of infection

Secondary Bloodstream Infection >: N - No

Died **: N - No

Discharge Date: 12/23/2019

Pathogens Identified >: Y - Yes If Yes, specify below ->

Antibiogram results are required for certain organisms

Pathogens

Pathogen 1: Escherichia coli - EC — 21 drugs required

> AMK ○S ○R ○I ○N	> AMP ○S ○R ○I ○N	> CEFOX ○S ○R ○I ○N	CTET ○S ○R ○I ○N	> CIPRO ○S ○R ○I ○N	LEVO ○S ○R ○I ○N	MOXI ○S ○R ○I ○N
> COL ○S ○R ○N	PB ○S ○R ○N	> DORI ○S ○R ○I ○N	MERO ○S ○R ○I ○N	> DOXY ○S ○R ○I ○N	MINO ○S ○R ○I ○N	TETRA ○S ○R ○I ○N
> AMPSUL ○S ○R ○I ○N	AMXCLV ○S ○R ○I ○N	> CEFOT ○S ○R ○I ○N	CEFTRX ○S ○R ○I ○N	> AZT ○S ○R ○I ○N	> CEFAZ ○S ○R ○I ○N	> CEFEP ○S ○R ○I/S-DD ○N
> CEFTAZ ○S ○R ○I ○N	> CEFUR ○S ○R ○I ○N	> ERTA ○S ○R ○I ○N	> GENT ○S ○R ○I ○N	> IMI ○S ○R ○I ○N	> PIPTAZ ○S ○R ○I ○N	> TIG ○S ○R ○I ○N
> TMZ ○S ○R ○I ○N	> TOBRA ○S ○R ○I ○N					

Add Drug

Questions?

Upcoming Trainings

- **Webinars**
  - **Monday Feb 1: SSI Webinar, 10-11 a.m. CST**

- **Virtual Trainings**
  - **Knoxville: Friday Feb. 5th, 8:30 am-10:30 am ET**
  - **Johnson City: Friday Feb 12th, 8:30 am-10:30 am ET**
  - **Memphis: Friday Feb 19th, 8:30-10:30 CT**
  - **Nashville: Friday Feb 19th, 1 pm-3pm CT**
  - **Chattanooga: Feb 26th, 8:30 am-10:30 am ET**

Resources

Contact

- **TDH HAI Program:**
  - HAI.Health@tn.gov
  - **HAI Online Workspace:** https://sites.google.com/site/tnhaionline/
- **NHSN:**
  - NHSN@cdc.gov
  - **NHSN Website:** http://www.cdc.gov/nhsn

NHSN Resources

- **CLABSI:** http://www.cdc.gov/nhsn/acute-care-hospital/clabsi/index.html
- **CAUTI:** http://www.cdc.gov/nhsn/acute-care-hospital/CAUTI/index.html

- **Patient Safety Component Manual**
  - **CLABSI:** http://www.cdc.gov/nhsn/PDFs/pscManual/4PSC_CLABScurrent.pdf
  - **CAUTI:** http://www.cdc.gov/nhsn/PDFs/pscManual/7pscCAUTIcurrent.pdf
  - **Locations:** http://www.cdc.gov/nhsn/PDFs/pscManual/15LocationsDescriptions_current.pdf

- **Patient Safety Component Forms**
  - **CLABSI:** http://www.cdc.gov/nhsn/acute-care-hospital/clabsi/index.html#dcf
  - **CAUTI:** http://www.cdc.gov/nhsn/acute-care-hospital/CAUTI/index.html#dcf